EXECUTIVE SUMMARY

The results of accreditation support activities documented in ASP-II provide the prospective model user with confidence that the model design, assumptions, limitations, inputs and outputs are reasonably valid representations of real world conditions and outcomes. This confidence is typically achieved via reviews by subject matter experts (SMEs) familiar with the real world phenomena simulated by the model. The end product of this review is a determination of whether the model can reasonably be expected to produce results realistic enough to be of use for the application at hand. Verification and validation (V&V) activities contributing to such reviews can be divided into two categories:

Logical Verification, which ensures that the basic equations, algorithms, and design of the model are reasonable and correct, and which identifies assumptions and limitations inherent in the implementation, and;

Face Validation, which consists of input data verification and validation, comparison of model outputs with assessments and known or best estimates, and a review of sensitivity analysis results.

This Volume II Accreditation Support Package (ASP) provides software design information in the Conceptual Model Specification (CMS) (Section 2.0) that supports logical verification and Sensitivity Analysis information (Section 3.0) that supports face validation activities. Results of logical verification and face validation reviews are provided in Sections 4 and 5, respectively. When coupled with ASP-I information, ASP-II provides the user with the best possible confidence in top-level model results short of detailed V&V, the results of which are addressed in ASP- III.

This edition of the ASP-II describes the capabilities and limitations of Suppressor version 5.4. Suppressor is a mission- or raid-level simulation developed to analyze combat effectiveness in a variety of combat scenarios involving land-, sea-, and air-based platforms ranging in number from one-on-one to hundreds-on-hundreds. Suppressor is a Monte Carlo, event-driven simulation that represents individual combat platforms at a system level of detail. The fundamental modeling entity is called a player which may represent one or more different elements or physical entities (such as radars, missile launchers, tanks, aircraft, etc.) at different locations, and each element is comprised of any number of eight basic system types which include: sensor transmitters and receivers, communication transmitters and receivers, weapon systems, countermeasure systems (disruptors), thinker systems, and mover systems. Other attributes, such as signature, and tactics, including reactive maneuver decisions, target assignment, target engagement, and emission control (EMCON), are also user-defined model inputs.

The scope of this documentation task was limited to a high-level Functional Element (FE) CMS only and includes top-level design requirements, design approaches, and software descriptions. The design approaches are not appropriate for detailed verification but should be adequate for logical verification by SMEs. In addition, Sections 3, 4, and 5, which are Sensitivity Analyses, Logical Verification Results, and Face Validation Results, respectively, are not available in this edition.

Table i-1 identifies the individual CMS sections included in this edition of the Suppressor ASP-II and provides a cross-reference to the FE number in the Functional Area Template (FAT). The FAT is located in Appendix A.

TABLE i-1. Functional Element Cross Reference Matrix.

FUNCTIONAL AREA	#	FUNCTIONAL ELEMENT	2.0 CMS
I Platform			
		1.0 Attributes	
	1	1.1 Configuration	2.1
	2	1.2 Movement	2.2
	3	1.3 Signatures (EO/IR/RF/UV)	2.3
	4	1.4 Vulnerability	2.4
	5	2.0 Sensors	2.5
	6	3.0 Weapons	2.6
	7	4.0 Comm Devices	2.7
	8	5.0 CM/CCM	2.8
		6.0 Decision Making Elements	
	9	6.1 Capabilities	2.9
	10	6.2 Knowledge Base	2.10
	11	6.3 Logic Processes	2.11
II Environment			
	12	1.0 Atmospheric Characteristics	2.12
	13	2.0 Topographic Characteristics	2.13
	14	3.0 Bathymetric Characteristics	N/A
III Command Control and Communications (C^3)			
	15	1.0 Command Chain Hierarchy	2.15
	16	2.0 Network Communications	2.16
	17	3.0 Areas of Interest/Responsibility	2.17